EXECUTIVE SUMMARY
AIRCRAFT ACCIDENT INVESTIGATION
HH-60G, S/N 97-26779
MOODY AFB, GEORGIA
12 AUGUST 2002

On 12 August 2002, an HH-60G Pave Hawk helicopter, S/N 97-26779, performed an unplanned landing and rolled over to its left side shortly after takeoff in a mountainous region of southeast Afghanistan. The HH-60G, permanently assigned to the 41st Rescue Squadron, 347th Rescue Wing, Moody AFB, Georgia, was temporarily assigned to the 41st Expeditionary Rescue Squadron, 416th Air Expeditionary Group, and was deployed in support of Operation ENDURING FREEDOM. All crewmembers safely egressed the helicopter with only minor injuries. The helicopter sustained an estimated $2,833,141 in post impact damage to the rotor blades, engines, transmissions and tail section. There was no damage to civilian property or injuries to persons on the ground.

The two-ship formation had flown over 250 miles in the preceding three hours to MEDEVAC two victims of a convoy ambush. They had successfully completed their life-saving mission under very challenging circumstances, safely delivering the patients for treatment. After approximately one hour on the ground at a remote location, both aircraft took off to return to their alert base. Flight lead made an uneventful marginal power takeoff, and the mishap aircraft departed after lead from the same spot, on the same heading. The mishap aircraft's departure was slower than flight lead's, and as a result, the aircraft was engulfed in a dust cloud created from its own rotor wash, reducing external visibility to zero. The pilot attempted to climb above the dust, but got too slow to maintain level flight due to reduced power available in the thin mountain air. Losing altitude, with no ability to climb or see, the aircraft commander elected to set the aircraft back down, but the crew had limited resources for controlling the descent due to a malfunction which left both pilots without their Vertical Symbology Display System (VSDS), the primary instrument for controlling drift in such a situation. The aircraft touched down firmly in a left, rearward drift, rebounded back into the air briefly, then impacted a sand berm while still drifting aft and left. It rolled slowly to the left and came to rest on its left side.

Clear and convincing evidence indicates the primary cause of this mishap was the aircraft commander's less than optimum takeoff technique (which created conditions conducive to creating the dust-out), combined with the aircraft commander's attempt to out climb the dust-out with insufficient power. Also causal, by clear and convincing evidence, was the failure of the VSDS on both sides of the cockpit, which substantial evidence indicates was caused by one of the following: lower than normal electrical power output when the rotor speed decreased upon reaching engine power limits, or an undiagnosed electrical interruption or electrical spike in a component critical to both VSDS displays. Other factors determined by substantial evidence to have contributed to the mishap include a recent change to local terrain at the mishap site (the crew did not know that the field at the end of the takeoff area had been freshly plowed, thereby increasing the likelihood of significant dust due to rotor wash), and both pilots' lack of "hands-on" practice (in either training or operational experience) with the combination of low power margin and dust-out conditions they experienced that night.

Under 10 U.S.C. 2254(d), any opinion of the accident investigators as to the cause of, or the factors contributing to, the accident set forth in the accident investigation report may not be considered as evidence in any civil or criminal proceeding arising from an aircraft accident, nor may such information be considered an admission of liability by the United States or by any person referred to in those conclusions or statements.